EUB Alberta Energy and Utilities Board

GUIDE 60 Updates and Clarifications

Updates and Clarifications to EUB Guide 60 Upstream Petroleum Industry Flaring Guide

December 1999

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Updates and Clarifications
EUB Guide 60
Upstream Petroleum Industry Flaring Guide

Purpose of the Updates and Clarifications Document

Guide 60 was developed as a comprehensive document to address flaring in the upstream petroleum industry. This web-based companion document to *Guide 60* provides an adaptive approach to communicate updates and clarifications as issues arise. The text will be updated when significant additional clarifications are needed.

This *Guide 60 Updates and Clarifications Document* is divided into two parts. Part A provides updates to *Guide 60*, while Part B contains clarifications and answers to frequently asked questions. Both parts follow the same section numbering as *Guide 60* itself.

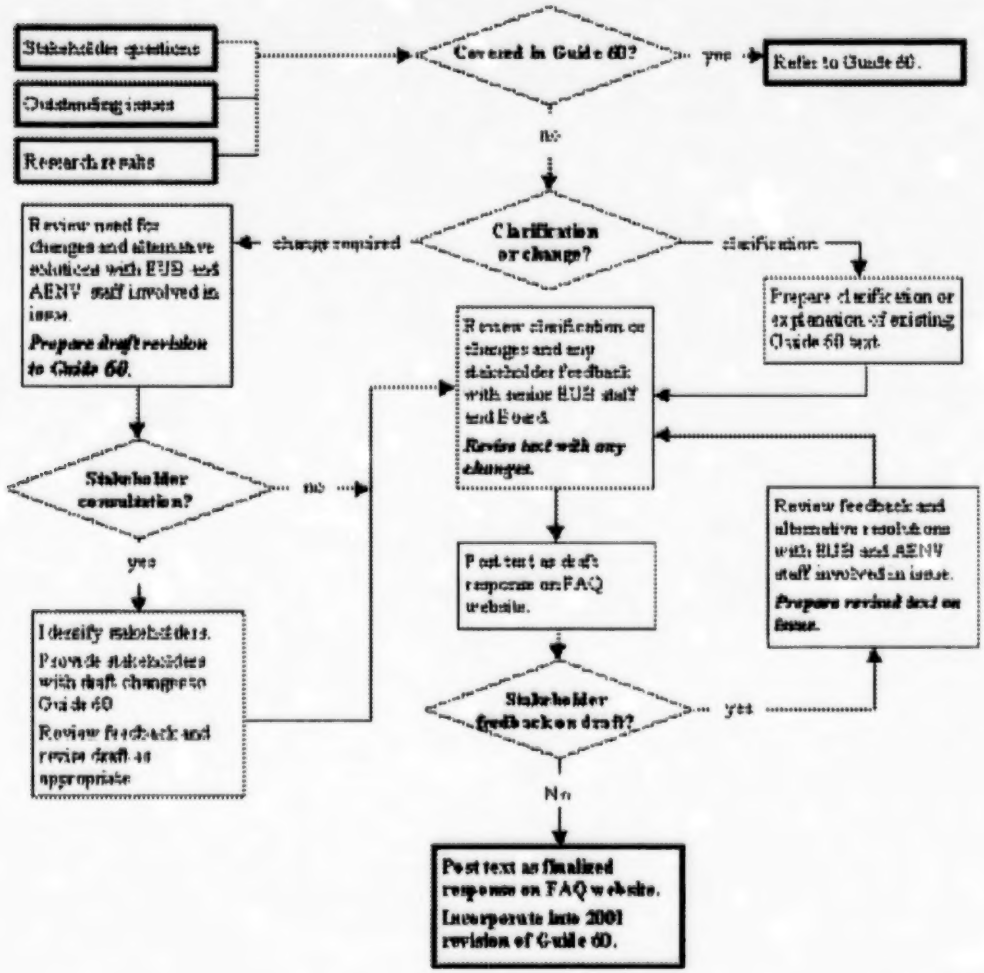
This puts in place a process for EUB review of issues that arise with respect to *Guide 60*. The process as outlined in Figure 1 provides for stakeholder feedback on the updates and clarifications published in this document and stakeholder input on any substantive changes to Guide 60.

In addition to clarifications in this document, the EUB has established a contact list (Table 1) to address questions related to specific sections of *Guide 60*. Feedback on information in this document can be directed to kim.eastlick@eub.gov.ab.ca.

Table 1: Guide 60 EUB Contact List

Subject Area	EUB Contact	Telephone/e-mail
Oil/Crude Bitumen Batteries Solution Gas Flaring	Earl Martin	(403) 297-6510 earl.martin@eub.gov.ab.ca
Gas Batteries/Gas Plants	Jim Spangelo	(403) 297-3566 jim.spangelo@eub.gov.ab.ca
Well Test/Pipeline Flare Permits	Lisa MacCallum	(403) 297-6977 lisa.maccallum@eub.gov.ab.ca
Flare Performance General Issues	Kim Eastlick	(403) 297-4325 kim.eastlick@eub.gov.ab.ca
Electricity Generation	Tom Chan	(403) 297-3267 tom.chan@eub.gov.ab.ca
Reporting & Measurement S-Reports	Brenda Benson	(403) 297-2888 brenda.benson@eub.gov.ab.ca
Inquiries and reporting regarding site specific flaring.	Appropriate EUB Field Centre	

Figure 1: Guide 60 Updates and Clarifications Process



Part A: Updates to Guide 60

1 Introduction

Part A provides information on updates to *Guide 60*. The updates include interim requirements to facilitate implementation of the Guide and changes in requirements or procedures arising from stakeholder feedback and EUB experience in applying *Guide 60*.

Stakeholders are invited to provide feedback and recommendations on the updates and clarifications that follow. The input will be reviewed and responded to by the EUB when this document is updated. This process enables the EUB to promptly address issues as they arise, yet adapt solutions based on ongoing stakeholder input and on experience gained from applying *Guide 60*.

2 Solution Gas Management

No updates or changes to this section have been made. Please refer to Part B, Section 2 for responses to frequently asked questions.

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3 Well Test Flaring

See also Part B, Section 3 for responses to frequently asked questions.

3.1 Well Test Public Notification Requirements

Guide 60 expanded the well test notification requirements defined in Oil and Gas Conservation Regulation Section 7.060(9.5) to 3 km for gas well tests and 1.5 km for oil well tests regardless of H_2S content. The Board, in response to concerns expressed about the extent of notification required, will implement the **interim well test flaring notification requirements summarized in Table 2, effective January 1, 2000**. The Board will review stakeholder feedback received by March 31, 2000 before finalising the notification requirements listed in Table 2.

Table 2: Well Test and Maintenance Flaring Notification

Flare Type (applies to both sweet and sour flare gas streams)	**Duration of Flaring** (hours in a 24 hour period)	**Flare Volume** (10^3m^3 in a 24 hour period)	**Notification Radius(1)**
Temporary flare for well clean-up, testing or maintenance.	< 4 **and** < 30		No notification (2)
Temporary flare for gas well testing if the gas contains less than 10 moles H_2S per kilomole.	> 4 **and/or** > 30		1.5 km
Temporary flare for gas well testing if the gas contains more than 10 moles H_2S per kilomole.	> 4 **and/or** > 30		3 km
Temporary flare for oil well testing.	> 4 **and/or** > 30		1.5 km
Well test or maintenance flaring through permanent battery or plant flare.	< 4	--	No notification (2)
Well test or maintenance flaring through permanent battery or plant flare.	> 4	--	0.5 km(2)

1. Operators must notify the Board field office, all rural residents, and administrators of any incorporated centres or hamlets 24 hours in advance of planned flaring operations.

2. Additional "good neighbour" notification, including for short duration events, should be conducted where members of the public have identified themselves as sensitive to emissions from the facility or as interested in receiving notice of planned flaring for other reasons. See discussion in *Guide 60*, Section 2.6, Table 1.

The notification distances listed in Table 2 represent minimum requirements. Operators should conduct "good neighbour" notification in situations where flaring, including events shorter than four hours in

duration, may be of concern to nearby residents for health sensitivity or other reasons (e.g., sensitive livestock operations). The EUB will monitor public complaints and concerns and may reconsider the provisions of Table 2 if it appears that voluntary good neighbour notification practices are not meeting public expectations.

Revisions to *Guide 56* will be implemented to require information specific to flaring for proposed wells and facilities to be provided to landowners and occupants.

While the Board recognises the additional efforts required to undertake the consultation and notification, it believes that these items can be incorporated into a company's initial and ongoing communications respecting an energy development in a particular area.

3.2 Air Dispersion Modelling Requirements for Sour Well Flare Permit Applications

The EUB expects that well test flares will comply with the 1 hour Alberta Ambient Air Quality Guidelines (AAQG) for SO_2 (450 $\mu g/m^3$).

3.2.1 Preferred Air Quality Assessment Process

The July 1999 final draft of the Alberta Environment Air Quality Model Guidelines (AQMG) does not allow for the use of either the "0.55" factor or the SEEC model and recommends using the U.S. Environmental Protection Agency (EPA) models (e.g., SCREEN3, ISC3) unmodified. Alberta Environment proposes the following sequential modelling options for well test flaring, which are consistent with its proposed AQMG.

1. Apply SCREEN3 utilising the full meteorological screening data set (e.g., all classes of stability).

2. If the concentration levels exceeded Alberta Ambient Air Quality Guidelines (AAQG) repeat the modelling without stability class A.

3. If the AAQG are not met in step 2, employ ISC3 with meteorological data coincident with the proposed timing of the flaring. A standard period, for example 2 months, around the time of the flaring, should be set out. The regional data sets, as posted on the Alberta Environment web site, may be suitable for this. Note that ISC3 and SCREEN3 predict plume rise from flares, and its impact on terrain in a similar fashion. The gains to be made in this step are in more narrowly defining the meteorological conditions, and in ISC3's handling of plume trapping.

4. If the concentration levels are still in excess of the AAQG, more sophisticated models such as AERMOD and CALPUFF are recommended. AERMOD, according to studies available from the EPA, is slightly less conservative than ISC3 especially in elevated terrain scenarios. It appears that this model can be run with similar input files as the ISC3 model, however this would require some confirmation. The CALPUFF model's treatment of plume rise from flares is significantly different than all the other models noted above, and will likely result in less conservative predictions. Its handling of terrain, if the proper data is input, is the most advanced of all these models.

5. Finally, the EUB is to be consulted if step 4 failed to comply with AAQG.

Where it is necessary to complete refined dispersion modelling assessments, operators will be expected to submit supporting information including model results, input data and assumptions as part of the sour

well flare permit application.

The EUB, in consultation with Alberta Environment, is working with the Canadian Association of Petroleum Producers (CAPP) to further define ambient air quality modelling approaches specific to well test flaring.

3.2.2 Interim Sour Well Test Screening Approach

It is recognized that industry may not be fully capable of implementing the process outlined in Section 3.2.1 in the near term. In order to facilitate time for training and development of industry practices, the EUB will accept use of the modification of flare heat radiation loss by increasing the heat release rate by 1.67 for SCREEN3 input as an interim measure only. The "0.55" factor adjustment for SCREEN3 will no longer be accepted. The EUB will review this interim measure and the procedures outlined in Section 3.2.1 during the first quarter of 2000 and will end the use of model adjustment factors after March 2000.

In cases where adjusted SCREEN3 results do not meet the 1 hour AAQG for SO2, operators will be expected to complete more refined assessments using the process described in Section 3.2.1 to define conditions under which test flaring is acceptable.

3.3 Flaring During Underbalanced Drilling

Guide 60 requirements for well test flaring including public notification and flare performance requirements (Section 7) apply to underbalanced drilling. In particular **flare permits are required for underbalanced drilling well test programs where total volumes flared will exceed 600 10^3m^3 or where the flared gas contains more than 50 moles H_2S per kilomole of gas**.

Operators may conduct a single notification to each resident in the notification area (see Table 2) for the underbalanced drilling well test program rather than notification for each flaring period during the program if this is acceptable to the affected parties. This should be discussed during the initial notification process. Similarly, EUB Field Centre notification requirements for the underbalanced drilling well test programs should be addressed with local EUB staff.

Interim Directives *ID 94-3: Underbalanced Drilling* and *ID 97-6: Sour Well Licensing and Drilling Requirements* explain other underbalanced drilling requirements.

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4 Gas Battery Flaring

No updates or changes to this section have been made. Please refer to Part B, Section 4 for responses to frequently asked questions.

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5 Gas Plant Flaring

No updates or changes to this section have been made. Please refer to Part B, Section 5 for responses to frequently asked questions.

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6 Pipeline Emissions

See also Part B, Section 6 for responses to frequently asked questions.

6.1 Notification Requirements for Pipeline Flaring

EUB *Guide 60*, Section 6.1 states notification requirements for flaring from pipeline operations as follows:

> All rural residences and the administrators of any incorporated centres or hamlets within at least a 3 kilometre radius and the EUB Field Centre must be notified at least 24 hours prior to the commencement of flaring.

The requirements were derived from *IL 91-2* and are based on well test flaring requirements for sour gas. Section 57 of the Pipeline Regulations requires that releases of gas containing more than 0.16 moles of H_2S per kilomole of natural gas be burned unless a permit is received from the EUB.

The requirements are intended to apply in situations where planned blowdown of pipelines will result in significant flaring in temporary stacks at sites where flaring does not normally occur. It is recognised that application of *Guide 60* to all situations is not practical. The information in Table 3 clarifies EUB requirements.

Table 3: Pipeline Maintenance Flaring Notification

Flare Type (applies to both sweet and sour flare gas streams)	Duration of Flaring (hours in a 24 hour period)	Flare Volume (10^3m^3 in a 24 hour period)	Notification Radius(1)
Temporary flare for pipeline maintenance.	< 4 **and** < 30		No notification (2)
Temporary flare for pipeline maintenance if the gas contains more than 10 moles H2S per kilomole.	> 4 **and/or** > 30		3 km
Temporary flare for pipeline maintenance if the gas contains less than 10 moles H2S per kilomole.	> 4 **and/or** > 30		1.5 km
Pipeline maintenance flaring through permanent battery or plant flare.	< 4	--	No notification (2)
Pipeline maintenance flaring through permanent battery or plant flare.	> 4	--	0.5 km(2)

1. Operators must notify the Board field office, all rural residents, and administrators of any incorporated centres or hamlets 24 hours in advance of planned flaring operations.

2. Additional "good neighbour" notification, including for short duration events, should be conducted where members of the public have identified themselves as sensitive to emissions from the facility or as interested in receiving notice of planned flaring for other reasons. See discussion in *Guide 60*, Section 2.6, Table 1.

The notification distances listed in Table 3 represent minimum requirements. Operators should conduct

"good neighbour" notification in situations where flaring, including events shorter than four hours in duration, may be of concern to nearby residents for health sensitivity or other reasons (e.g., sensitive livestock operations). The EUB will monitor public complaints and concerns and may reconsider the provisions of Table 3 if it appears that voluntary good neighbour notification practices are not meeting public expectations.

Where it is planned to flare sour gas containing greater than 5% H_2S and where the volume to be flared will exceed 15 10^3m^3 (1 tonne sulphur equivalent) operators must contact the EUB regarding a flaring permit. Notification requirements listed in Table 3 will apply as appropriate. Application requirements and EUB staff contacts for sour gas flaring permits are the same as for sour well tests involving gas containing more than 5% H_2S.

Flaring from permanent or temporary pipeline stacks must meet requirements of *Guide 60*, Section 7, including Section 7.4 requirements for dispersion modelling of sour gas flares.

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7 Flare Performance Requirements

No updates or changes to this section have been made. Please refer to Part B, Section 7 for responses to frequently asked questions.

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8 Venting

See also Part B, Section 8 for responses to frequently asked questions.

8.1 Minimum Venting Reporting

Where S-reports are routinely submitted for a well or facility, it is required that vented volumes to the nearest 0.1 10^3m^3 be measured or estimated and reported. Where S-reports are not routinely submitted, such as for well completions, the reporting of minimal volumes of occasionally vented gas may not be practical. In situations where total volumes are not significant (less than 500 m^3 in total) the EUB would be prepared to waive the reporting requirement.

8.2 Treatment of Gas Well Production Delivered to Oil Batteries

The following update of *Guide 60* is provided to address the following questions:

- How do we separate gas wells in oil batteries?
- Is this gas production kept whole, or can we allocate/prorate main battery gas back to all wells?

Operators must apply to the EUB's Operations Group and obtain approval to physically tie a gas well into an oil battery system where they identify a need. These applications will be reviewed and dealt with on an individual basis. Approval from the Operations Group is not required if one of the following conditions apply:

- Total associated gas is less than 500 m^3/d.
- Total associated gas is less than 16.9 $10^3m^3/d$ but exceeds 0.5 $10^3m^3/d$ and the ratio of gas well gas to the total gas delivered from the battery is less than 0.65.
- Total associated gas exceeds 16.9 $10^3m^3/d$ and the ratio of gas well gas to the total gas delivered from the battery is less than 0.35.

If approval is granted or is not required, based on the above criteria, the operator is required to obtain a new battery code (see EUB Guide 7, Appendix 3) and submit a separate set of S-reports for the gas well (s)/battery showing delivery of its gas volume to the oil battery. This change will allow for the clear differentiation between solution gas and gas well gas. Operators with gas wells tied into an oil battery that do not have written approval or do not meet the above criteria must make application immediately to the Operations Group.

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9 Sulphur Recovery Requirements

No updates or changes to this section have been made. Please refer to Part B, Section 9 for responses to frequently asked questions.

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10 Measurement and Reporting

No updates or changes to this section have been made. Please refer to Part B, Section 10 for responses to frequently asked questions.

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11 Industry Performance Reporting

No updates or changes to this section have been made. Please refer to Part B, Section 11 for responses to frequently asked questions.

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12 Enforcement

No updates or changes to this section have been made. Please refer to Part B, Section 12 for responses to frequently asked questions.

Part B: Clarifications & Frequently Asked Questions

1 General Questions

1. ***How do these EUB activities relate to greenhouse gas reductions that may be required to meet the Kyoto agreements?***

   The flare reduction schedule included in *Guide 60* is based on resource conservation and a precautionary approach in recognition of potential health, safety, and environmental impacts. The flaring initiative will contribute to an overall reduction in greenhouse gases.

2. ***What facts demonstrate the flaring's effect of flaring on health and environment?***

   As a minimum, the Alberta Ambient Air Quality Guidelines provide guidance on acceptable impacts on air quality, however these do not address emissions of hydrocarbon or products of incomplete combustion. The flaring guidelines and flare reduction requirements are based on energy conservation, pollution prevention, and precautionary principles. As such, it is not necessary to demonstrate environmental harm before implementing reasonable measures to control flaring and venting.

3. ***Is there a set timeline for reporting in regards to all facilities, for example those not associated with solution gas?***

   Yes, in general the requirements of *Guide 60* are effective 1 January 2000. Specific exceptions are listed in Section 1.1 of *Guide 60*.

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2 Solution Gas Management

1. ***How does Section 2 of Guide 60 (Solution Gas Management) apply to vented gas?***

   Where vented gas volumes are significant on a site (say greater than 0.5 $10^3 m^3/d$), operators should consider opportunities to eliminate or reduce vented volumes. Operators would be expected to review operations where venting is common to determine that venting is being done in compliance with Section 8 of Guide 60. The EUB will require specific evaluations of venting elimination by either gas conservation or flaring for facilities where repeat odour complaints are received. If the repeat complaints are traced to continuous or routine venting of odorous gas, the EUB may require conservation or flaring of the vented gas.

2. ***What is meant by personal consultation and public notification?***

   Please see the definitions contained in EUB Guide 56.

3. ***Can you provide clarity on solution gas flaring limitations for heavy oil operations? (e.g., Conventional oil solution gas conserving facilities must shut in production to reduce flaring for planned maintenance exceeding 4 hours. Such curtailments in thermal heavy oil operations may adversely affect effective production cycles.)***

   The entire *Guide 60* applies to heavy oil operations. There is a clause in Section 2.6.2 that allows operators to contact the EUB Field Centre to discuss lesser reductions in solution gas production than those specified. The operator must demonstrate why the oil production cannot be reduced as

required.

4. ***Does the economic decision tree apply only to continuous solution gas flares? Are conserving facilities exempt?***

   The Flaring Management Decision Tree applies to all solution gas flares. If a battery is conserving 100% of the solution gas and only flares during operational problems, it is not necessary to complete the streamlined economic evaluation. However, if gas is flared occasionally, the flare stack will have to meet the flare performance requirements in Section 7 of *Guide 60*.

5. ***Is CONSENT required from residents within 500 metres or is NOTIFICATION enough?***

   Notification only is required and is sufficient for planned flaring.

   In the case of new applications involving a flare stack, EUB policies and procedures outlined in *Guide 56* would apply.

6. ***Is the focus on flaring at conserving facilities on volume reduction, or public perception/concern, or both?***

   The objective at conserving facilities during turnarounds is both to reduce the volume of gas flared, and alleviate concerns of the public.

7. ***What logic or methodology was used to establish flare reduction volumes? Are these reductions political or technical in nature?***

   The flare reduction volumes were based on a consensus recommendation of the CASA Flaring Project Team which included public, petroleum industry, and regulatory agency participation.

8. ***Are incinerated gas volumes included in overall flare volumes?***

   Incinerated gas volumes are included in overall flare volumes. This recognises that the first objective is reduction of flaring and that incineration, while it may have higher combustion efficiency, does not result in gas conservation or reduction of SO_2 emissions.

9. ***In the economic evaluation (Section 2.4) are gas processing fees allowed in addition to the 10% for operating expenses?***

   The purpose of the streamlined economic evaluation is to determine which batteries in the province should conserve gas. It is important that all operators use the same parameters to evaluate gas conservation projects. The Flare Implementation Team selected an operating cost allowance of 10% which is deemed to cover the **incremental** operating expenses of equipment installed and all additional fees such as gas transmission fees, compression fees, gas process fees, etc. It is intended that no other fees would be included in the calculation.

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3 Well Test Flaring

See also Part A, Section 3

1. ***Will the EUB consider reduced requirements for consultation and public notification if incinerators are used in preference to flares?***

   While the Board recognizes that the combustion efficiency associated with an incinerator is qualitatively improved over that of an open flare, it believes, given the outstanding concerns respecting oil and gas operations, that reduction of notification requirements as noted in Table 2 would not be appropriate.

2. ***What public consultation is required for well maintenance flares?***

   If flaring is done through a **permanent stack** "good neighbour" notice should be considered for short duration flaring. For flaring lasting longer than 4 hours through a permanent flare stack, the notification requirements listed in Table 1, Section 2.6 of EUB Guide 60 should be used for guidance. Reduced notification in this case is appropriate because new flares of this type would be part of facilities applications and would be considered in related consultation, approval, and hearing processes.

   If flaring is conducted with a **temporary stack**, the provisions of Table 2 in Part A, Section 3.1 of this document would apply.

3. ***Will operators be required to flare gas associated with drill stem tests (DST)?***

   Oil and Gas Conservation Regulation Section 7.060(4) requires that any gas containing more than 10 moles per kilomole H_2S that is vented to the atmosphere for greater than 10 minutes be burned in a flare that is not less than 12 metres in height.

   As a guideline, operators should consider flaring DST gas containing lesser concentrations of H_2S if the tests will be of significant duration and if the public could be affected by significant odours.

4. ***Will personal consultation and public notification be required for drill stem tests conducted?***

   EUB encourages that all possible operations, including drill stem tests, be discussed with landowners and occupants during the initial consultations for a well or facility.

5. ***Will companies be required to meet the minimum heating value requirements set out in Guide 60 for initial flow backs from wells where nitrogen has been used to enhance initial flow from the well?***

   The EUB notes that the heating value of the majority of gas associated with hydrocarbon production is greater than the 20 MJ/m^3 heating value described in Guide 60, Section 7.3.2. The EUB expects that a flame will be present during flaring operations, but will not require the minimum heating value requirement to be met for initial well flow back of a short duration involving large quantities of nitrogen.

6. ***Why do the same flare performance requirements have to be met for sour well testing (i.e. SO_2***

ambient air guidelines) as for continuous flares when these well test flares are not continuous sources and are only a small portion of the total flared emissions in the province?

The flame performance requirements apply to all flares including well tests. Analysis of recent well test data indicates that test flare volumes contribute more than was anticipated from earlier (1997) data and that they are significant in terms of total flaring.

7. ***Who is responsible for completing ambient air quality assessments (e.g., dispersion modelling) for sour well tests? It is noted that EUB staff have run dispersion models based on release parameters supplied by applicants in the past.***

   Operators are responsible for completing appropriate dispersion modelling of sour well test flares per requirements listed in Guide 60, Section 7.4. **The EUB will not complete model runs necessary for sour gas flaring permits on behalf of operators**. The air quality assessment must employ defensible computer dispersion models and must follow accepted methodologies and standards (see Part A, Section 3.2 of this document for further information).

   Detailed assessments for special case situations and involving complex terrain and/or multi-source models may require evaluations by qualified specialists. Operators are responsible for ensuring appropriately trained and qualified personnel complete the air quality evaluations.

   Operators will be expected to provide copies of dispersion modelling assessments on request of EUB staff.

8. ***If concurrent sour well tests are expected in an area, does the dispersion modelling have to take multiple sources into account?***

   Operators must be aware of existing SO_2 emissions sources and concurrent sour well tests in the vicinity of proposed sour gas flaring sites if individual source models indicate 1 hour ground level ambient air quality SO_2 concentrations in excess of 150 $\mu g/m^3$. In such cases either the timing of the tests should be adjusted to avoid concurrent sour gas flaring or cumulative emissions assessments as explained in Guide 60, Section 7.4.4 must be completed.

9. ***If screening models show that H_2S or SO_2 exceedances will occur under certain atmospheric conditions, will a flare permit be issued on the condition that flaring will not occur when detrimental atmospheric conditions exist?***

   See Part A, Section 3.2 of this document. The EUB may consider, on a case by case basis, situations where flares can meet the Alberta Ambient Air Quality Guidelines except under certain atmospheric conditions. In such cases specific flaring procedures may be approved, as long as flaring is curtailed under the unfavourable meteorological conditions. Related flaring permits may require meteorological and/or ambient air quality monitoring.

   Such situations will likely require more refined air quality assessments following the process outlined in Part A, Section 3.2. Operators are expected to assess the potential need for special sour well test permit conditions as part of early well planning activities and to plan for sufficient lead time to obtain special-case flaring permits.

10. ***Knowing that dispersion models are conservative, why can downwind monitoring no longer be used to determine if/when exceedances of H_2S or SO_2 occur?***

    Given the distribution of wind direction and the variability of meteorological conditions, the probability of detecting an ambient air quality problem with a downwind monitor would be remote unless several monitors were deployed. It is viewed that such an approach may not provide an adequate level of environmental and public safety protection.

11. ***When there is a discrepancy in the requirements for flaring during well testing between EUB Guide 40 and EUB Guide 60, which requirements take precedence?***

    The requirements in Guide 60 must be met for all well test flaring.

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4 Gas Battery Flaring

1. ***What notification is required for flaring at batteries with permanent flare stacks?***

   Notification requirements listed in Guide 60, Section 2.6, Table 1 would generally apply for flaring at batteries with permanent flare stacks.

2. ***Do the unscheduled/emergency flaring reporting requirements listed in Informational Letter IL 98-01 continue to apply for batteries and other production facilities?***

   IL 98-01 remains in effect and describes reporting requirements for flaring that exceeds Alberta Environment approval conditions or EUB approved volumes, is longer that 24 hours in duration or that results in black smoke or potential adverse conditions. The following section from IL 98-01, Attachment 1 explains emergency flaring reporting requirements.

   2 UNSCHEDULED/EMERGENCY FLARING

   For flaring resulting in one or more of the following, contact the most appropriate organization and request referral.

Event		Primary Contact	Phone Numbers
2.1	Exceed AEP approval conditions	AENV	(780) 422-4505
2.2	Exceed EUB approved volume or greater than 24 hours in duration	EUB	Local EUB Field Centre
2.3	Black smoke or potential adverse conditions (e.g., public complaints) AENV approved facility	AENV	(780) 422-4505
2.3	Black smoke or potential adverse conditions (e.g., public complaints) EUB only approved facility	EUB	Local EUB Field Centre

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5 Gas Plant Flaring

1. ***Do the unscheduled/emergency flaring reporting requirements listed in Informational Letter IL 98-01 continue to apply to gas plants?***

   Il 98-01 remains in effect as summarized in Part B, Section 4, question 2 of this document.

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6 Pipeline Emissions

See also Part A, Section 6.1 of this document for updated pipeline flaring notification requirements.

1. ***Do the unscheduled/emergency flaring reporting requirements listed in Informational Letter IL 98-01 continue to apply to pipeline facilities?***

   Il 98-01 remains in effect as summarized in Part B, Section 4, question 2 of this document.

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7 Flare Performance Requirements

1. ***What is the EUB doing to eliminate the production of products of incomplete combustion from other industries?***

   The EUB is able to address matters only within its jurisdiction. While it recognises that emissions from other activities and/or other industrial sectors may also be of significance to the general public, it believes these matters should more appropriately be discussed with Alberta Environment as they have regulatory responsibility (including the setting of emission limits) for other industrial activities.

2. ***Knowing that flare efficiency is based on a standard flare head – is any work being done with respect to high efficiency heads or incineration?***

   The industry, through the Petroleum Technology Alliance of Canada (PTAC), is investigating research options for a flare test facility.

3. ***How will the EUB enforce the opacity requirements in Guide 60?***

   The requirement that opacity shall not exceed 40% for more than 6 minutes is one that appears in the Environmental Protection and Enhancement Act (EPEA) – Substance Release Regulation for any source in the Province of Alberta. The EUB proposes to utilise similar procedures to determine compliance with the requirement. Operators are encouraged to ensure smoke from flares is minimised to the greatest extent possible. The EUB will respond to complaints regarding smoke from flares. Training in visible emissions monitoring is offered by Mount Royal College in Calgary.

4. ***Does the EUB have an application process to reduce the minimum heating value required by***

Guide 60 from 20 to 12 MJ/m³?

Guide 60 increases the minimum heating value requirement for flares from 9 MJ/m³ to 12 MJ/m³. In addition, it provides the EUB with a mechanism to increase the heating value at an existing facility to a minimum of 20 MJ/m³ in the face of complaints respecting the subject flare. Operators, upon completion of changes to improve flare performance, may request that approval to operate at lower heating values be reinstated. Operators will be expected to document the justification for reinstatement of approval to operate the flares at heating values less than 20 MJ/m³. Matters pertaining to existing flares will normally be handled by the respective EUB Field Centre staff.

For new facilities, operators not wanting to undertake detailed engineering for flare facilities will be required to meet the 20 MJ/m³ minimum heating value requirement. Those undertaking engineered design flare systems will be allowed to operate at lower design flare gas heating values to a minimum of 12 MJ/m³. The EUB may require submission of design evaluations to support flares that are proposed to operate at less than 20 MJ/m³ heating value as part of the facilities applications review process (e.g., Guide 56 application supplemental information).

5. ***Does the minimum heating value apply only to acid gas flares or to all flares?***

   The minimum heating value applies to all flares. However, the minimum heating value of most flared gas other than acid gas from sweetening processes is higher than 20 MJ/m³.

6. ***Is it Guide 60 or the plant licence that determines the heating value requirements for acid gas flares?***

   The minimum heating value of 12 MJ/m³ supersedes plant approvals where the specified minimum heating value is less than 12 MJ/m³ (e.g., 9 MJ/m³).

7. ***The Guide says that other sources in the "area" should be considered if SO_2 dispersion models predict that ground level concentrations will exceed 1/3 of the 1 hour Alberta Ambient Air Quality Guideline for SO_2 (e.g., 150 µg/m³). How big should the "area" be?***

   Continuous SO_2 emissions sources within the outer 150 µg/m³ isopleth should be considered (e.g., Evaluate all continuous SO_2 emissions sources within the radius where maximum SO_2 concentrations are predicted to be greater than 150 µg/m³).

8. ***Is it necessary to do a cumulative impact assessment evaluation in situations where modelling of emergency flaring results in predicted maximum ground level SO_2 concentrations greater than 150 µg/m³ (e.g., greater than one third of the 1 hour ambient guideline)?***

   It is not necessary to complete a cumulative assessment if the emergency flaring condition is reasonably expected to be of short duration (i.e., less than 4 hours). The cumulative assessment requirement was intended to address effects of multiple continuous SO_2 sources in an area.

   The EUB would expect that operating procedures to limit the duration of flaring would be put into place where the emergency stack design was based on the above exception. If flaring of sour or acid gas for periods greater than 4 hours could occur under planned operating procedures, then

a cumulative evaluation should be completed.

Emergency flaring assessments are now specified in the AENV document "Emergency/Process Upset Flaring Management: Modelling Guidance."

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8 Venting

See also Part A, Section 8

1. ***At what temperature does the true vapour pressure of 83 kPa apply?***

   The vapour pressure shall be based on a product temperature that is the greater of 21.1°C if the liquid is stored at ambient temperatures or the maximum monthly average liquid temperature if the liquid is stored in a heated tank.

2. ***How do Guide 60 benzene venting requirements apply to sites with more than one dehydrator and/or other continuous source of vented gas? Do the requirements apply on the basis of each point source or to total site emissions?***

   It is intended that the *Guide 60* limits on annual benzene mass emissions would apply on a site basis since the object is to limit off-site exposures.

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9 Sulphur Recovery Requirements

No clarifications.

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10 Measurement and Reporting

1. ***With respect to Section 10.1.2 (Estimating Requirements, Item 1), to what degree of accuracy do you expect the estimates to be calculated?***

   The estimates should be calculated to the nearest 0.1 10^3m^3/month.

2. ***Does Section 10.1.2 (Estimating Requirements, Item 3) apply only to continuous flaring or all flaring? Does this include well blowdowns in shallow gas operations?***

   This applies to all flared or vented gas.

3. ***With reference to Section 10.2 (Flared Gas Reporting on S-Statements), if we have third party solution gas being flared and reported on our S-1, how do we get that backed out of the report card? Or, if solution gas is being flared at a downstream facility before processing of the gas begins (e.g. inlet separator) is this not (in essence) a field flare and not a plant flare?***

   The battery operator is responsible for all gas flared at its facility.

Gas is to be reported as flared at the facility location where the gas is actually flared.

If solution gas is flared at a gas plant, this would be reported as gas plant flaring.

4. ***When will CAPP produce estimating and measurement criteria?***

   CAPP has prepared a publication: "Recommended Practices for Flaring of Associated and Solution Gas at Oil Production Facilities," which should be available from them or on their web site.

5. ***In the Guide, the number relating to accuracy is 0.1 10^3m^3. How much emphasis will be placed on this for facilities estimating if an audit is conducted?***

   Information on measurement and accuracy requirements is provided in Guide 56 (Volume 2), Guide 7, Guide 49 and Guide 54.

6. ***What is the compliance date to correctly report gas wells tied into oil batteries? (Section 10.2 in Guide 60.)***

   The compliance date is January 1, 2000.

7. ***Does all the information required for the flare log have to be kept in one binder? Or can the required information be stored in a central location in various files?***

   Guide 60, Section 10.3 describes requirements for flaring records. The information must be readily available for reference if requested by the EUB and may be retained at central operating or office sites. The choice of how the information is maintained (e.g., binders or files) is up to the operator.

8. ***Does a flare log have to be maintained for a single well that has routine blowdowns resulting in small volume/short duration flares?***

   It is expected that a record of flaring events and volumes will be maintained. Such a log could be maintained at a central operating centre.

   See Part A, Section 8.1 regarding minimum volumes for reporting. Note that the reporting exception applies only to occasionally vented volumes.

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11 Industry Performance Reporting

1. ***Is each company's flaring 1996 baseline posted on the EUB web site or available from the EUB?***

   This 1996 baseline data for each company is not posted on the EUB web site, and the EUB does not have this information available. The information will be available from your production accounting department. The 1996 baseline has been determined for the province as a whole.

2. ***If a company sells a property, is this reduction included in the company's baseline?***

   The 1996 baseline is based on facilities operated by your company during 1996.

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12 Enforcement

No clarifications.

Date this document was last edited: March 29, 2000